Exhibit C.6 – INTEC Sodium Bearing Waste*

Overview

From 1952 to 1991, DOE processed spent nuclear fuel at INTEC. The process was designed to recover the highly enriched uranium in the fuel using a three-step solvent extraction process. The first solvent extraction cycle resulted in a highly radioactive liquid that was stored at the Tank Farm. Subsequent extraction cycles, as well as decontamination activities, generated liquid waste that was concentrated by evaporation and was also stored at the Tank Farm - because of the high sodium content from decontamination activities, this waste has been referred to as sodium bearing waste (SBW). In addition, newly generated liquid waste from processes and decontamination activities at INTEC facilities and from other INEEL facilities has also been evaporated and stored at the Tank Farm. The Tank Farm consists of storage tanks, tank vaults, interconnecting waste transfer lines, valves and valve boxes, cooling equipment, and several small buildings that contain instrumentation and equipment for the waste tanks. The liquid wastes have been stored in ten 300,000-gallon capacity tanks (an additional 300,000-gallon tank is available as a spare). The Tank Farm also includes four smaller 30,000-gallon waste tanks that were flushed and removed from service in 1983. Both visual and sampling activities to date show that a small amount of solids are intermingled with the liquid SBW. Current estimates assume that up to 30,000 gallons of solids are contained in the Tank Farm.

Since 1963, liquid wastes stored at the Tank Farm have been converted to a dry, stable granular form called calcine using the waste calcining facilities at INTEC. Calcine is stored at INTEC in the Calcined Solids Storage Facilities, which are referred to as "bin sets."
In addition to putting the liquid into a solid form that poses less risk to the environment, calcining provided a two- to ten-fold volume reduction. As of February 1998, all of the liquid HLW derived from first cycle uranium extraction was converted to calcine. Calcining of the SBW and newly generated liquid waste remaining in the tanks continued through May 2000. The New Waste Calcining Facility was placed in standby in May 2000, in accordance with the Notice of Noncompliance Consent Order. The inventory of waste in the INTEC Tank Farm varies depending on operational activities and use of the High-Level Liquid Waste Evaporator. As of July 2003, approximately one million gallons of SBW remains in the tank farm.

Flushing and Cleaning of Tanks Preparatory to Grouting

During the cleaning of the large, 300,000-gallon tanks, the spray cleaning systems wash the tank interiors as the steam jet suction is placed in service to remove the waste and flush water. At times during the cleaning activity, the spray systems are turned off and the tank emptied as completely as possible with the steam jets to maximize waste removal and to see how clean the bottom is. On the last stage of cleaning, however, the tank is not completely jetted down, so enough depth will remain to allow for verification sampling. Once the sampling is completed, this heel of flush water and whatever remains in the tank is left as is. This is done for the following reasons: (1) During the final grouting stage, as the grout enters the tank, the steam jet will be activated to remove the flush water and any additional tank residuals in the tank - and the steam jet needs a heel volume in place to be started, (2) the goal is to remove additional tank solids residuals during this final grouting, and maintaining them in a liquid volume should ensure

the solid particles stay mobile, and (3) there is a possibility that if all the liquid was removed, the solid residuals would dry out and create airborne contamination issues during the final grouting. So, four or five inches (~5000 gallons) of flush water heel is left in the tank after the final verification sampling and will be removed during the grouting stage.

As yet plans have not been finalized for the smaller, 30,000-gallon tanks, but the conceptual thinking is the same. However, since the tanks are smaller, horizontal tanks, the flush water heel that will likely be left after cleaning should not be more than five hundred gallons per tank.

Composition of Sodium Bearing Waste (SBW)

The SBW remaining in the tank farm tanks is a liquid, mixed radioactive waste from a combination of sources. It is mostly made up of decontamination solutions generated in support of past operations and closure activities, but also includes some liquids from the second and third cycles of spent nuclear fuel reprocessing, and trace contamination from first cycle reprocessing extraction waste. SBW in the storage tanks includes a layer (up to a few inches in depth) of small, light, solid particles in the bottom of the storage tanks. SBW contains large quantities of sodium and potassium from extensive plant decontamination activities. It exists as a nitric acid solution (~one-to-three molar), and is high in transuranic isotopes, contains various RCRA-regulated heavy metals, is comprised of wastes regulated as RCRA listed waste with codes F001, F002, F005, and U134. Radionuclide concentrations in the SBW are generally 10 to 100 times less than those of first cycle raffinates from fuel reprocessing. (A complete description of the SBW characteristics can be found in "*Feed Composition for the Sodium-Bearing Waste Treatment Process*", INEEL/EXT-200-01378, Revision 2, dated January 2003.)

SBW Treatment Status as of 09/30/04

Technology development activities over the recent years have been focused on likely treatment options for the SBW, and include those associated with cesium ion exchange, grout immobilization, solids filtration, vitrification, steam reforming, calcination, and direct evaporation. Work in these areas includes laboratory scale evaluations as well as small pilot plant scale tests. As of January 2004, development activities will be curtailed and a final report issued which documents activities to date and identifies significant conclusions and remaining uncertainties. Engineering Design Files for specific treatment activities are available.

Various engineering studies have also been completed in the recent past on these same candidate SBW treatment processes. In addition, a feasibility study is currently being conducted to estimate cost and schedule to upgrade the current calcination system to allow its operation in compliance with RCRA and Clean Air Act requirements. This study will be completed by January 2004. Engineering Design Files for specific studies are available, including anticipated flow sheets, mass balances, and other pertinent engineering information at the shared website at http://www.id.doe.gov/doeid/RFPsharedlibrary/refdoc.htm.

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Environmental Impact Statement

DOE issued the Idaho High-Level Waste and Facilities Disposition Final Environmental Impact Statement (ID HLW EIS) in October 2002. The ID HLW EIS provides an analysis of environmental impacts for representative alternatives for the treatment, storage, and disposal (including transportation) of HLW calcine and SBW, and facilities disposition of HLW facilities when their mission is complete. The Record of Decision (ROD) for the ID HLW EIS has not yet been issued. The ROD is anticipated to be issued in phases pending selection of a treatment technology for SBW and results of the Federal Repository studies being performed to allow for direct disposal of the calcine.

* *In light of the legal uncertainty, all work under paragraph C.2.4.3 and the stabilization and disposal of residual solids and the in-place closure of the tank farm per Section C.2.8.1 shall require specific authorization by DOE.*